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Extracorporeal Shockwave Myocardial Reperfusion (ESMR) Therapy Improves Left Ventricular Dyssynchrony

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Introduction: Left ventricular (LV) dyssynchrony is frequently observed in patients with ischemic myocardium and is recognized as an adverse predictor of clinical outcome. ESMR on the other hand, is a novel therapy for refractory angina in patients with severe coronary artery disease not amenable for conventional revascularization therapy (CABG or PCI). ESMR induces angiogenesis in the area of iscaemic myocardium which later translates into improvement in clinical angina symptoms.

Objectives: The objective of this study is to analyses the impact of ESMR on LV dyssynchrony in patients with severe coronary artery disease.

Methods: We examined 20 consecutive patients with refractory angina due to severe coronary artery disease which is deemed unsuitable for conventional revascularization. Echocardiography with tissue Doppler study was performed for all patients before undergoing ESMR therapy of 9 weeks duration and was repeated again 3 months after completion of ESMR therapy. The degree of left ventricular dyssynchrony was expressed as Yu index. Comparison of pre and post ESMR LV dyssynchrony was then compared using paired t-test.

Results: Pre and post ESMR LV dyssynchrony in all 20 patients was 30.9±19 (pre) vs. 26.9±11.5 (post); P-value=0.385. However, comparative analysis of patients with initial (pre-ESMR) LV dyssynchrony with Yu index of 32 or more revealed pre and post ESMR mean values of 42.8±15.6 (pre) vs. 26.4±8.6 (post); P-value=0.008.

Conclusion: Our study suggests a potential beneficial effect of ESMR therapy in improving LV dyssynchrony in a sub-set of patients (Yu index of more than 32) with severe coronary artery disease not amenable for conventional revascularization. Further study is warranted to gather more evidence in supporting this finding.

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Disclosure of Interest: None Declared